EKSPO TVET@KKDW 2024

KEMENTERIAN KEMAJUAN DESA DAN WILAYAH

KOLEJ KEMAHIRAN TINGGI MARA PETALING JAYA

PARKVISION: IOT PARKING MANAGEMENT WITH ANPR SECURITY CAMERA

Kolej Kemahiran Tinggi MARA Petaling Jaya

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ABSTRACT

PARKVISION is an innovative IoT-based parking management system designed to streamline parking operations while enhancing security through Automatic Number Plate Recognition (ANPR) technology. This system optimizes parking space utilization by providing real-time monitoring of parking spot availability, enabling drivers to quickly locate and access available parking spaces.

PROBLEM STATEMENTS

Lack of real-time monitoring for parking spaces: Inefficient parking management systems lead to congestion and delays for drivers, reducing overall parking efficiency.

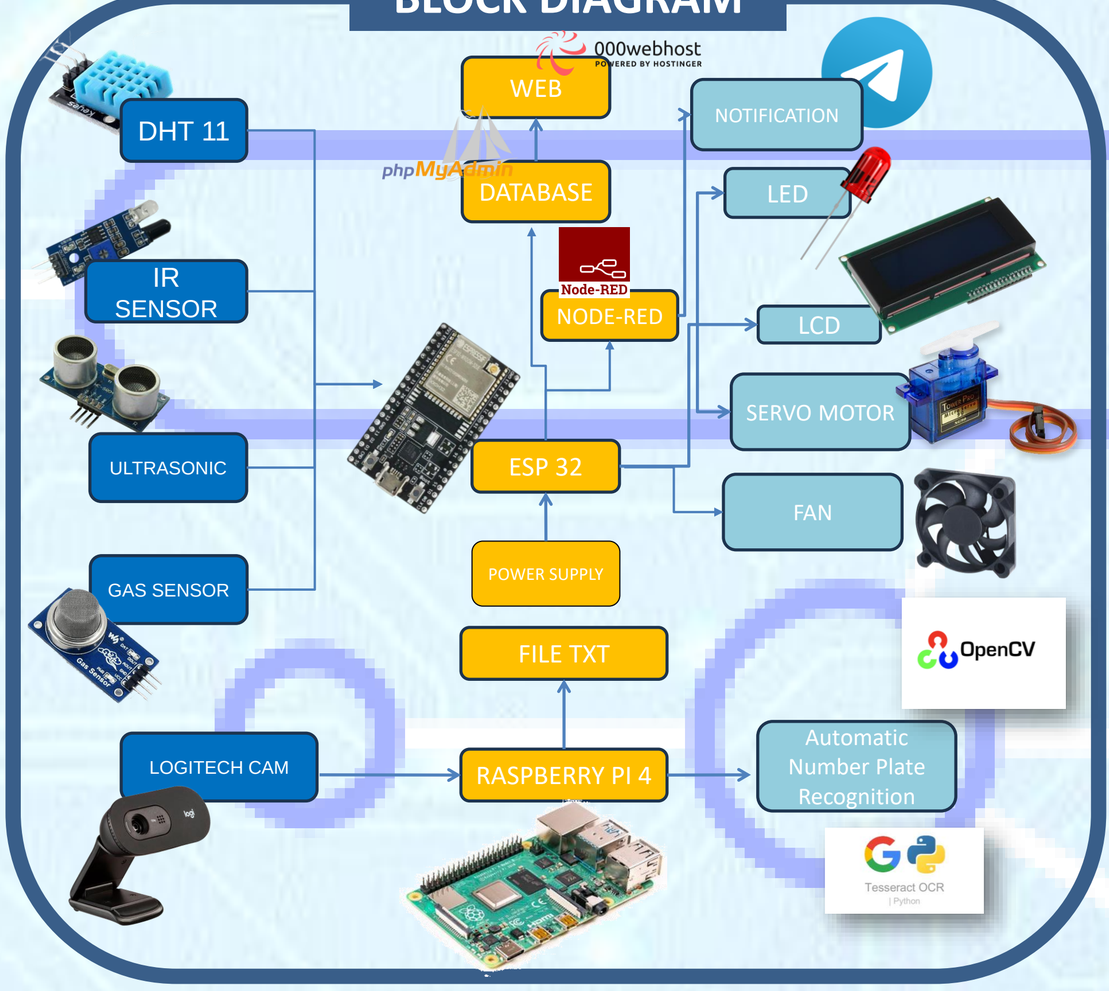
Absence of Gas Monitoring and Ventilation in Underground Parking: Underground parking can accumulate harmful gases, creating safety risks. Current systems may not detect these gases fast enough.

Environmental Monitoring Lacks: Parking facilities lack real-time monitoring of environmental conditions, potentially causing discomfort for users and damage to vehicles.

OBJECTIVES

Maximize Parking Efficiency: Offer real-time spot monitoring for swift access, reducing congestion.
Real-Time Gas Monitoring: Detect hazardous gas levels in underground parking areas and implement a fan system that is triggered automatically when gas levels exceed a safe threshold, reducing the risk of harmful gas accumulation.
Ensure Ideal Environment: Use DHT 11 sensors for continuous temperature and humidity monitoring, ensuring safety and comfort.

BLOCK DIAGRAM



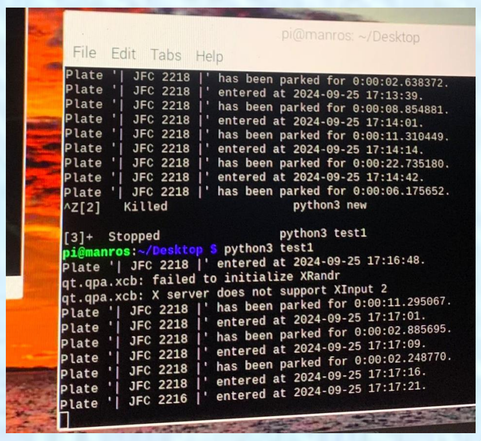
Autonomous Number Plate Recognition

OpenCV

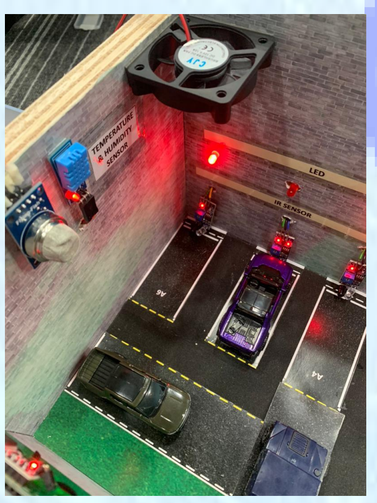
Detecting the pattern of number plate

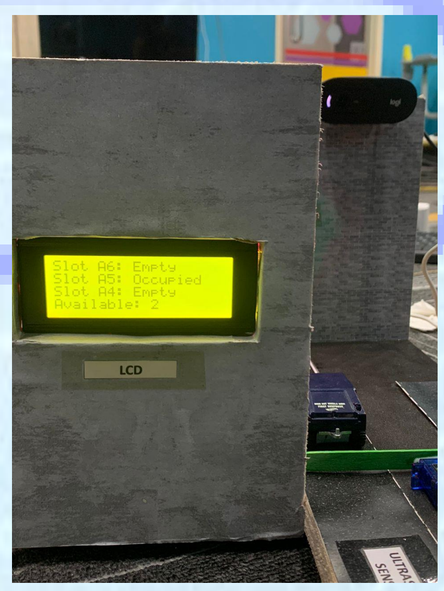
Tesseract OCR | Python

Performs scene text detection



PROJECT FIGURES





ARDUINO Genuino

KKTM Petaling Jaya with Internet of Things

Node-RED

OpenCV

Tesseract OCR | Python